SepSolve Analytical

BenchTOF2™ mass spectrometers

See what you've been missing

An introduction to SepSolve Analytical

Experts in analytical chemistry

SCHAUENBURG Analytics

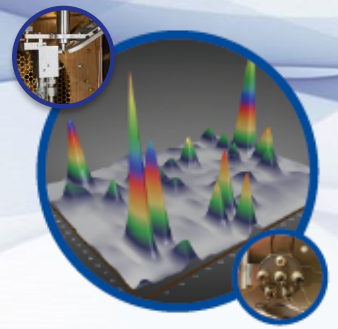
MARKES international

SepSolve Analytical

Sampling technologies

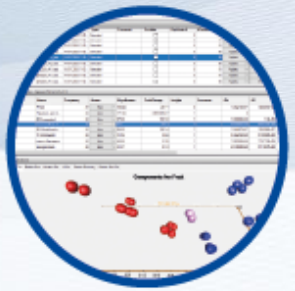
Thermal desorption

Sample enrichment



Separation technologies

Unique identification



Data analysis

Why choose BenchTOF2?

Enhanced sensitivity

Lower detection limits **(IDL <20 fg)** for a wider range of compounds in a single analysis

Superior spectral quality

Confident identification of analytes, through improved match factors and improved isotope abundances

Powerful mass accuracy

Mass accuracy of **<50ppm** and an easy-to-use mass-to-formula calculator for improved identification of unknowns

Extended dynamic range

Accurate quantification **(across 5 orders of magnitude)** of high-concentration compounds, while still reaching the required low detection limits. Removing the need for dilutions/repeat analyses.

Hydrogen carrier

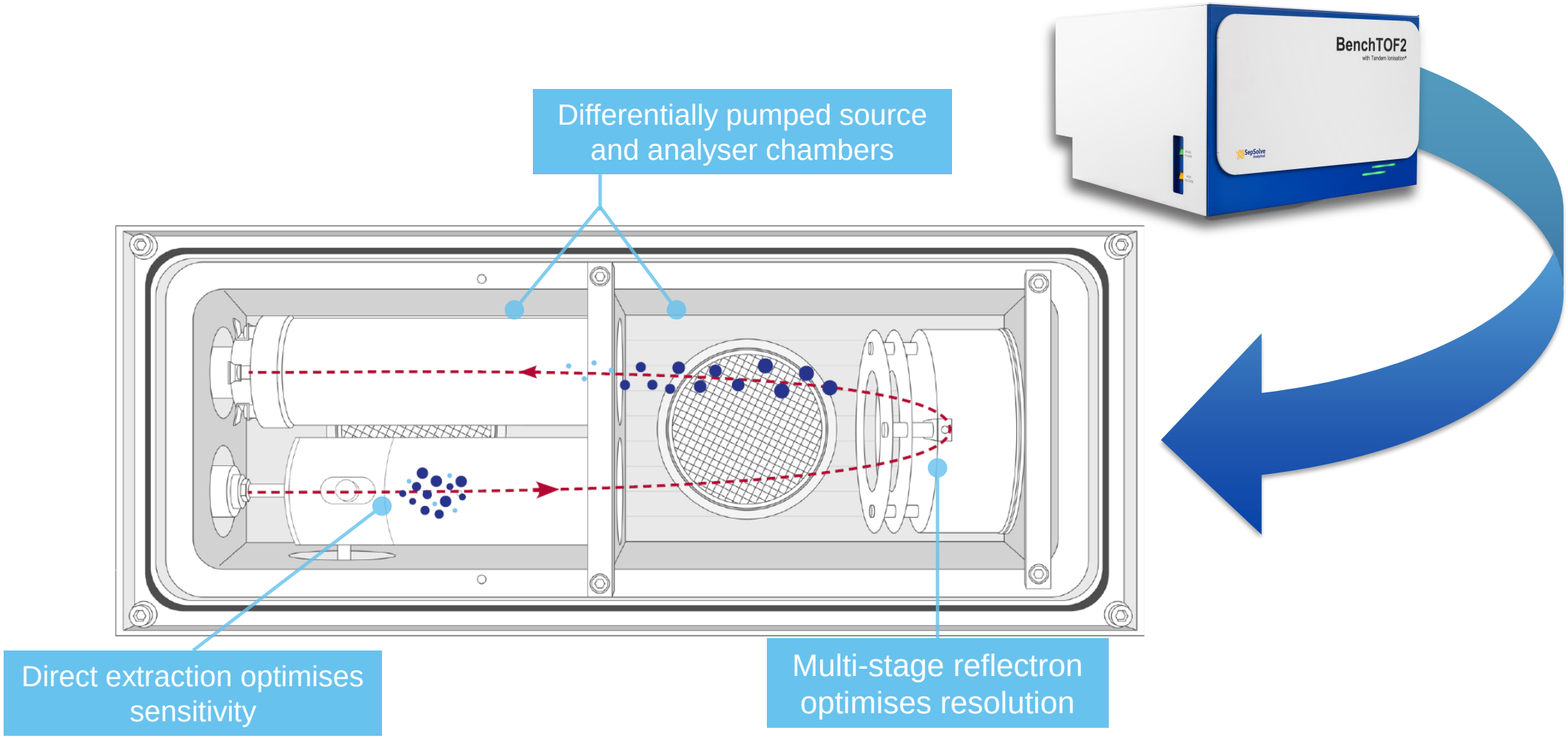
Fast chromatographic separations with reduced running costs and faster ROI

Tandem Ionisation®

Patented technology for simultaneous hard and soft EI. Providing uniquely confident identification, through all new streamlined workflows

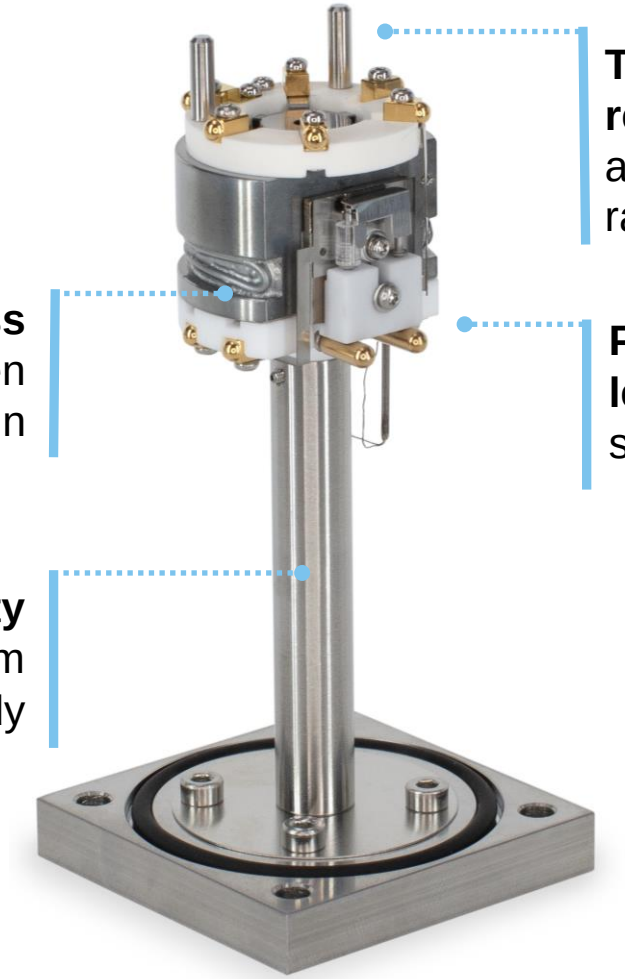
Time-of-flight (TOF) mass spectrometry

Proprietary BenchTOF2 technology



Improved stability and simplified maintenance

Redesigned ion source for 2025



Tool-free installation and removal with no need for adjustment thanks to the radial contacts

Precise alignment of lenses via the filament stack pins.

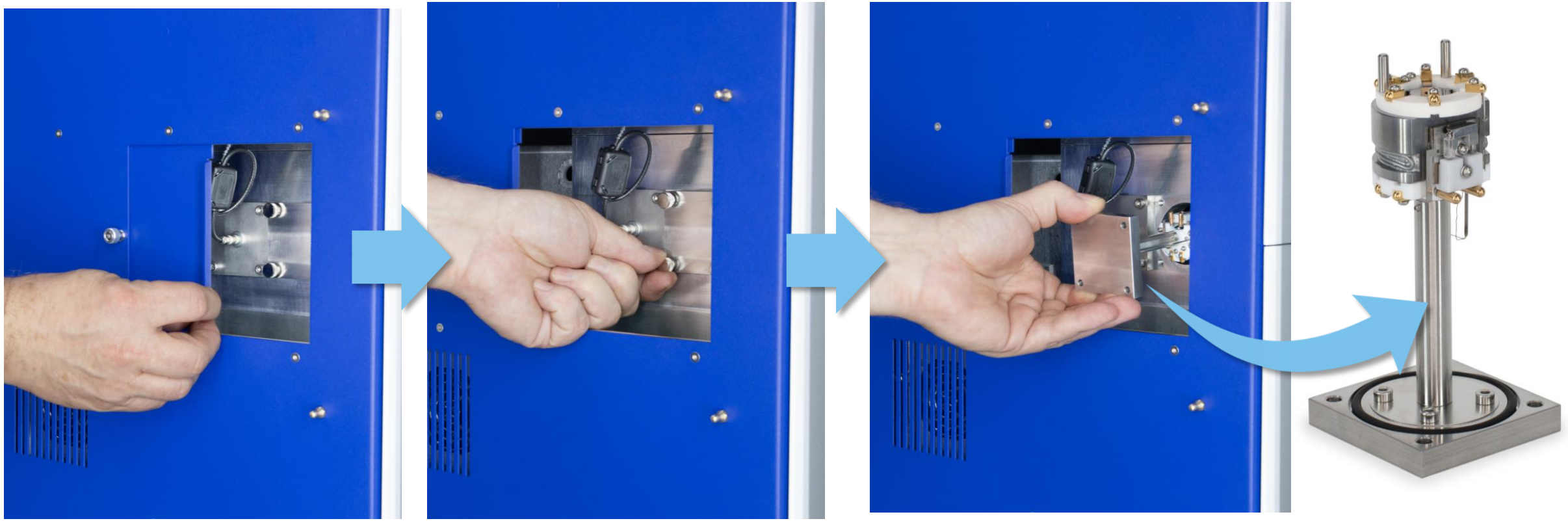
Prolonged cleanliness through the open source design

Reduced reactivity due to molybdenum coated body

- A redesigned ion source boosts robustness and prolongs cleanliness
- Enhanced performance for high boilers

Designed for minimal downtime

Tool-free ion source installation and removal



Get MORE from your mass spectrometer

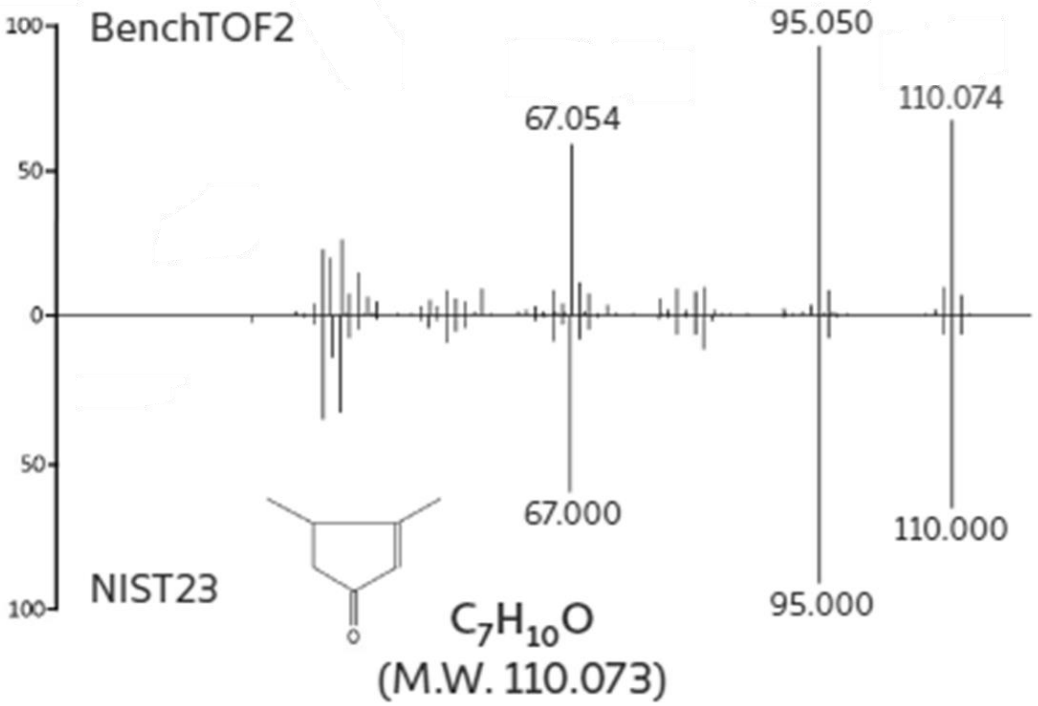
BenchTOF2 provides unparalleled non-target screening…

- ✓ MORE sensitivity
- ✓ MORE confidence
- ✓ MORE productivity
- ✓ MORE efficiency

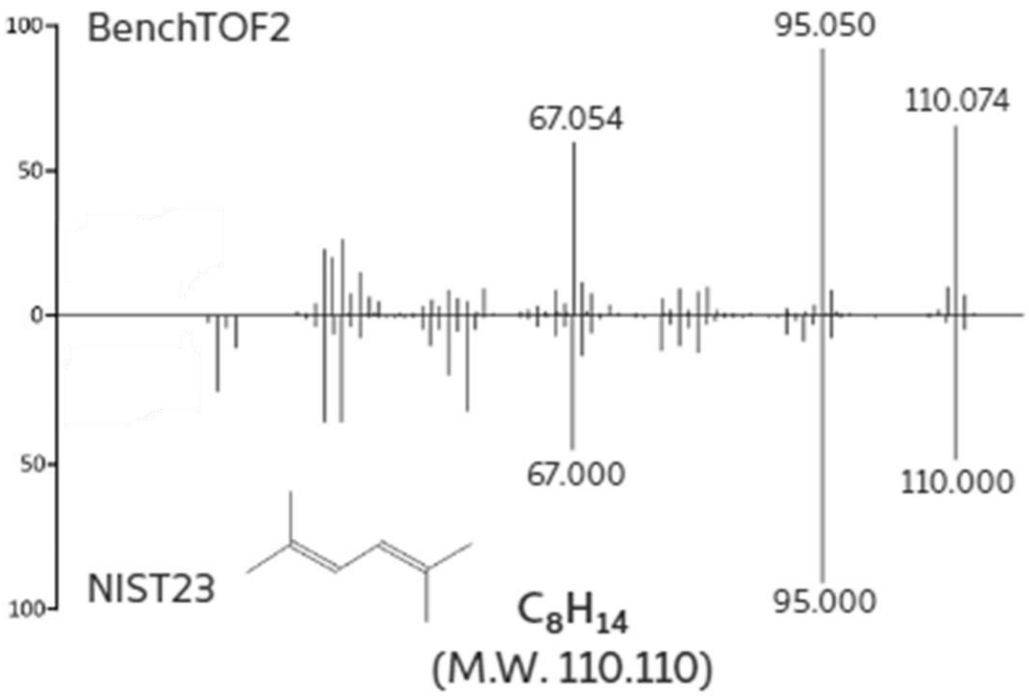
More confidence

Be sure you're identifying the correct compound

Library hit #1



Library hit #2

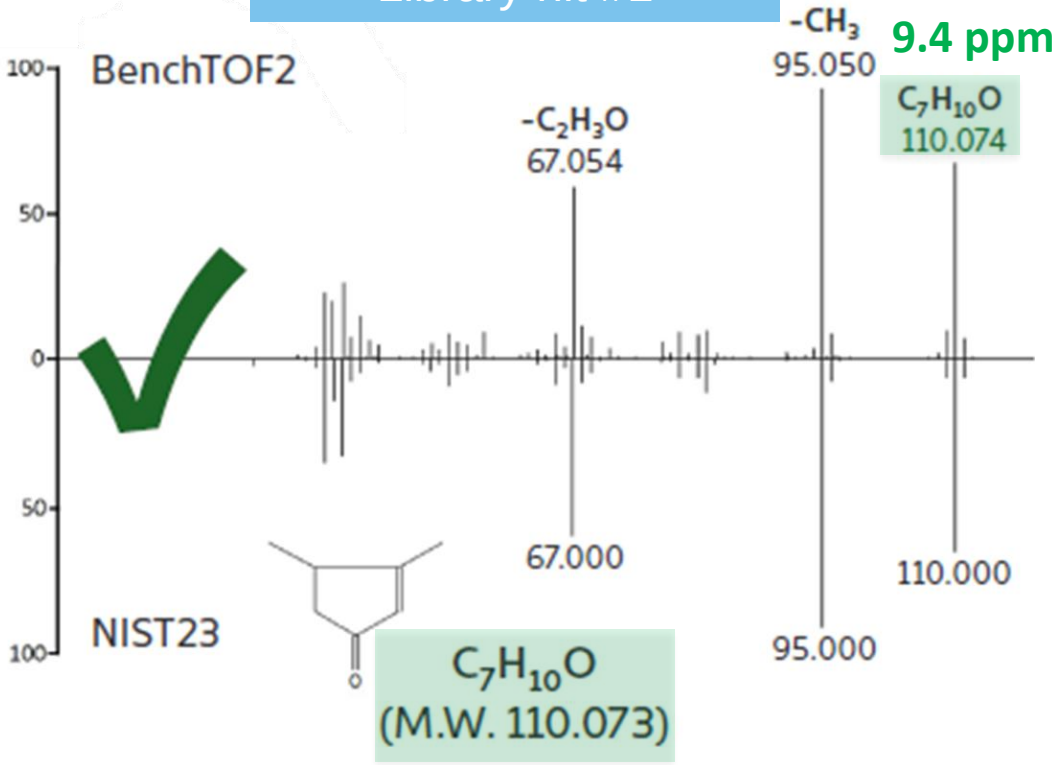


The top library hits are both strong. Which is correct?

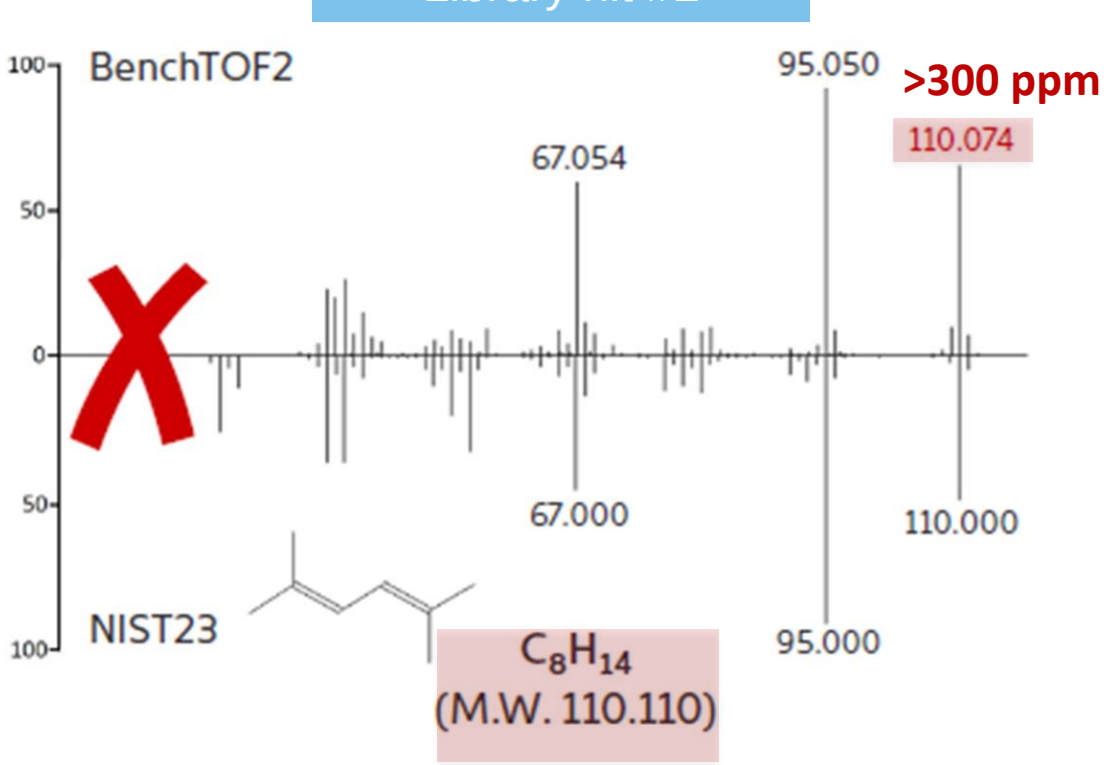
More confidence

Be sure you're identifying the correct compound

Library hit #1

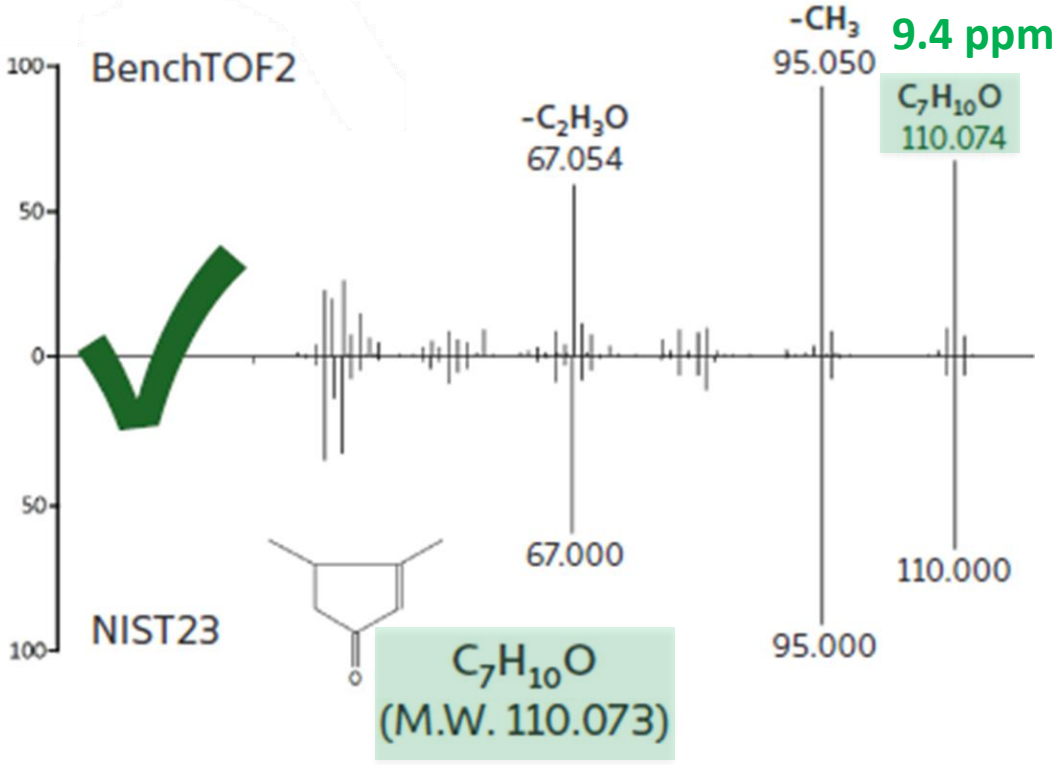


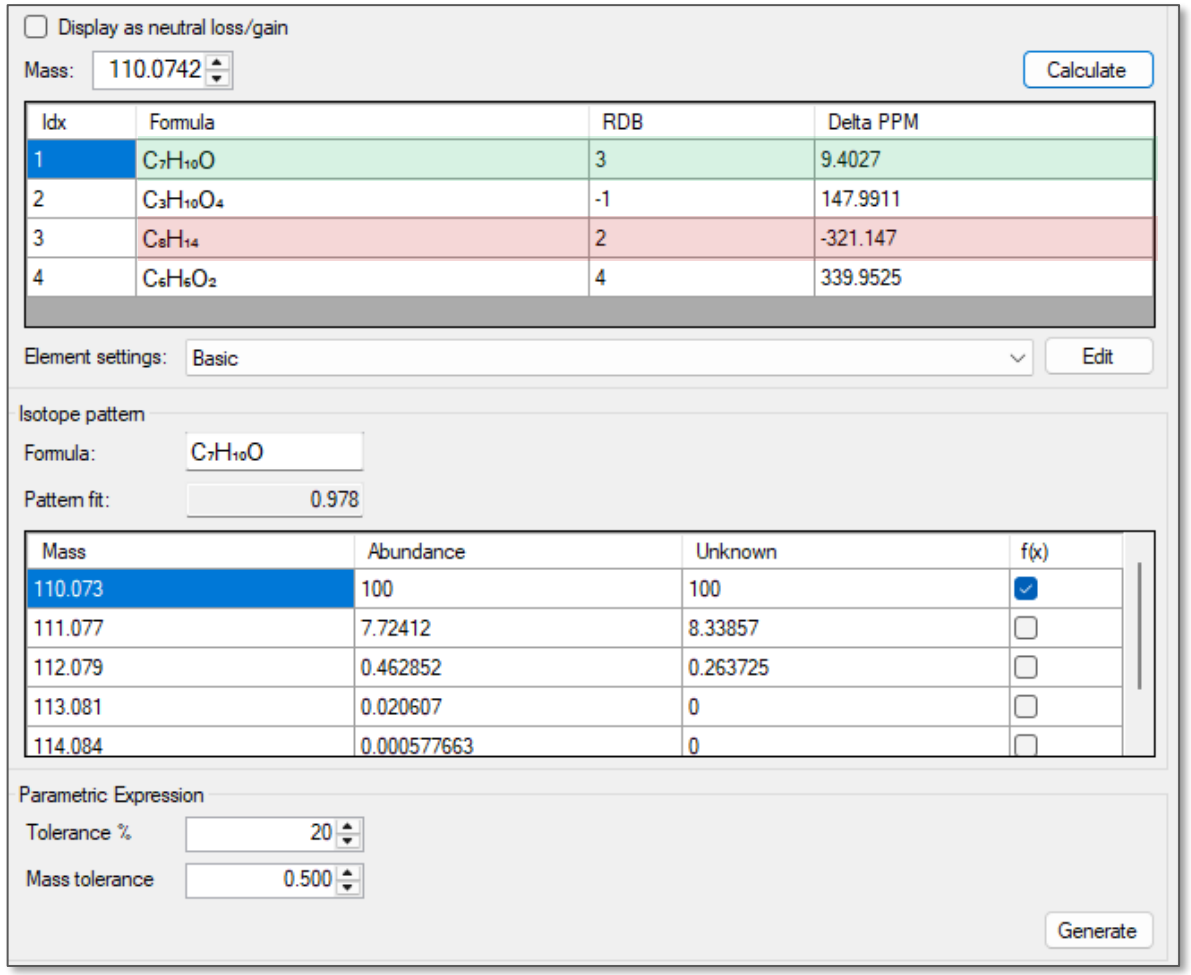
Library hit #2



More confidence

Be sure you're identifying the correct compound



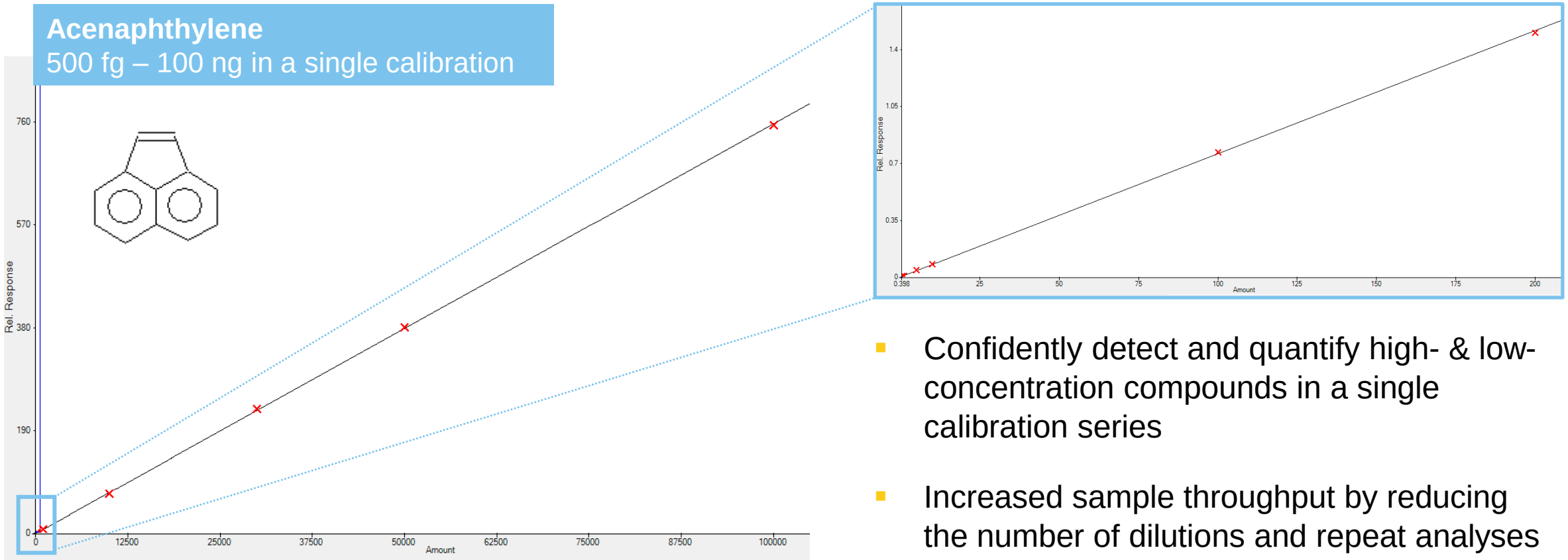


- User-friendly **mass-to-formula calculator** in ChromSpace® software simplifies identification

More productivity

Extended Dynamic Range (EDR) across 5 orders of magnitude

Acenaphthylene
500 fg – 100 ng in a single calibration

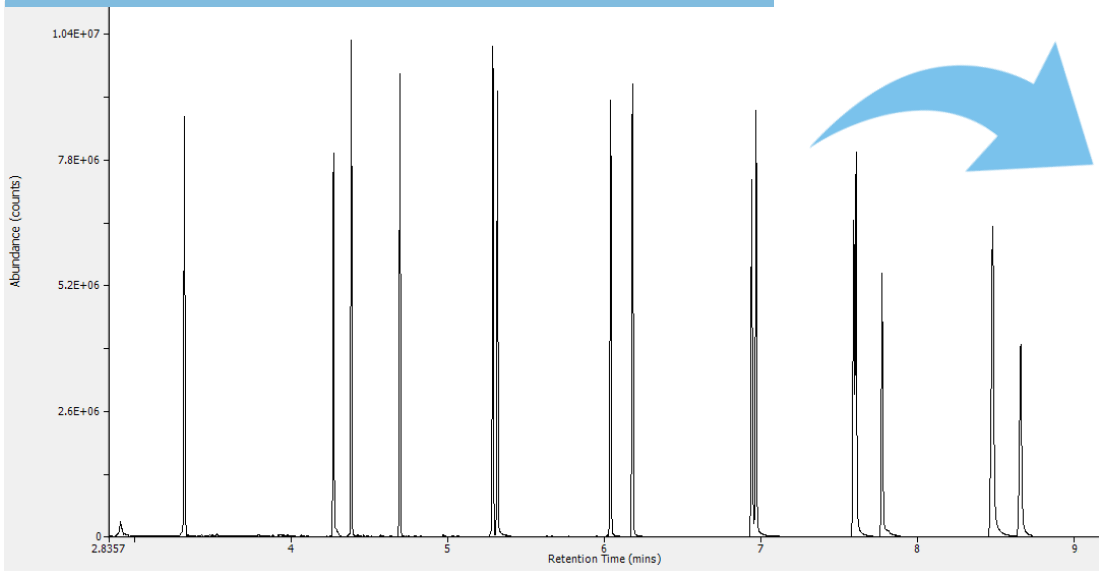


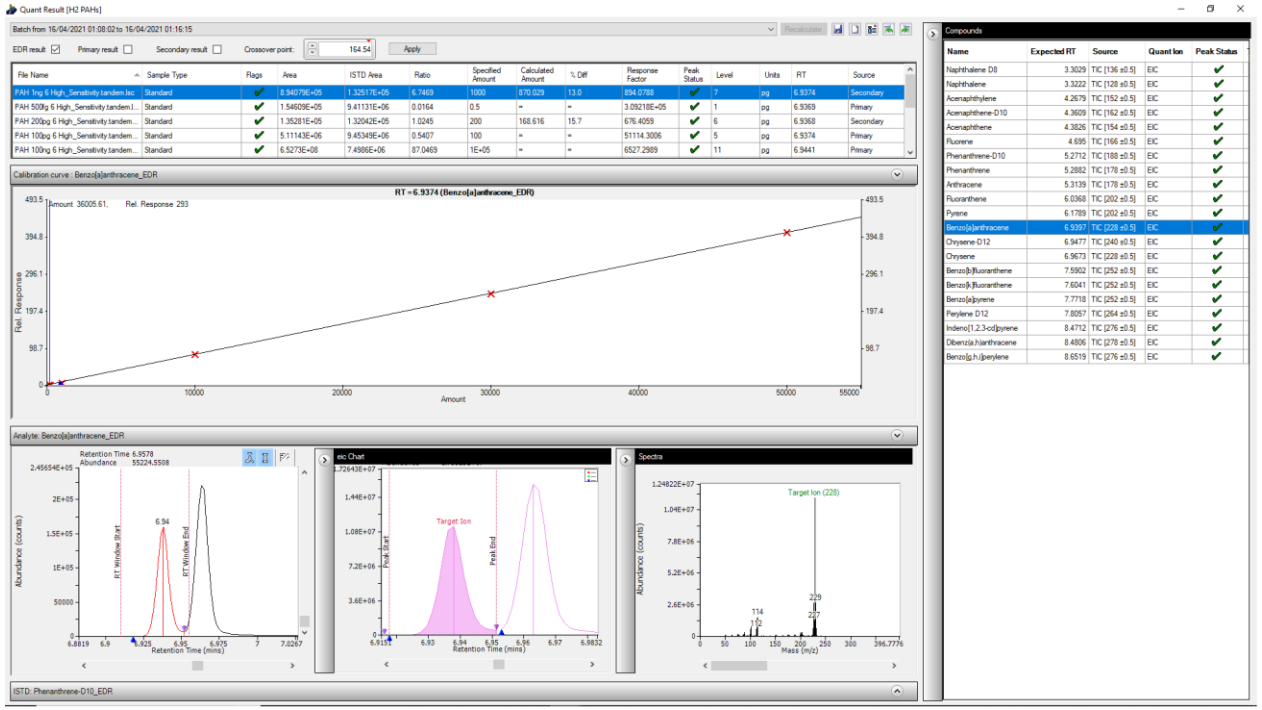
- Confidently detect and quantify high- & low-concentration compounds in a single calibration series
- Increased sample throughput by reducing the number of dilutions and repeat analyses required

More efficiency

BenchTOF2 is fully certified for use with H_2 carrier gas

16 priority PAHs in <10 minutes

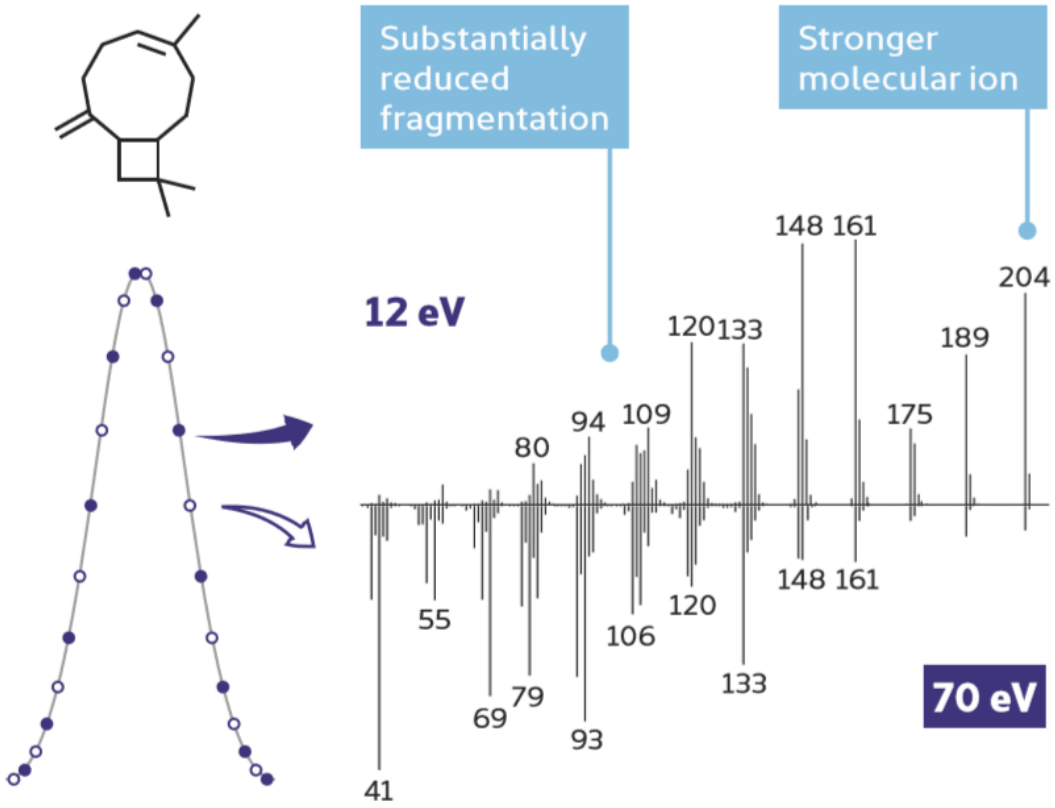




- **Economic benefits**: lower running costs than He, for savings of > 50% on your GC gas supply & faster ROI
- **Time-savings increase lab productivity**: faster throughput and improved chromatographic resolution
- **Environmentally-friendly**: eliminate He cylinder delivery to reduce your lab's carbon footprint

Patented technology

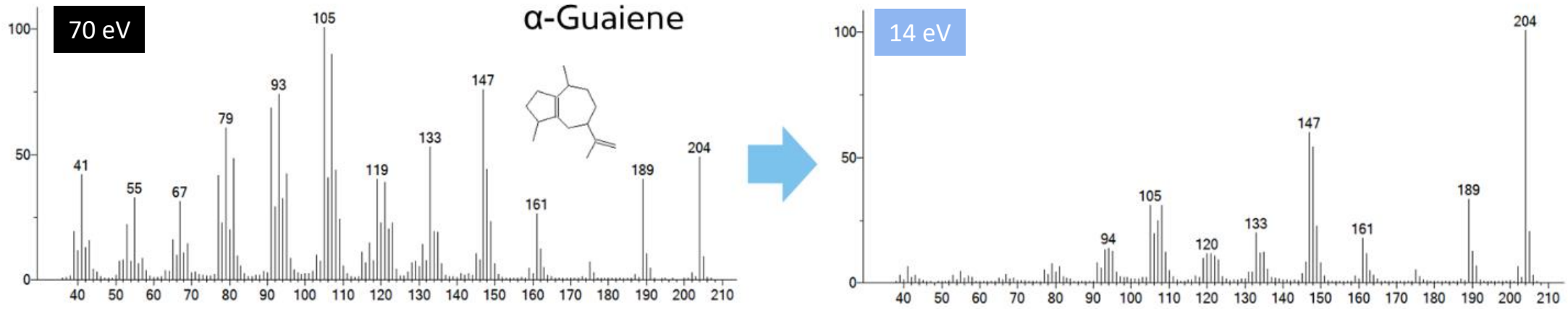
Tandem Ionisation®



- Acquire hard and soft EI simultaneously
- Complementary spectra to confirm compound identity
- Confirm isomer identity

Patented technology

Tandem Ionisation®

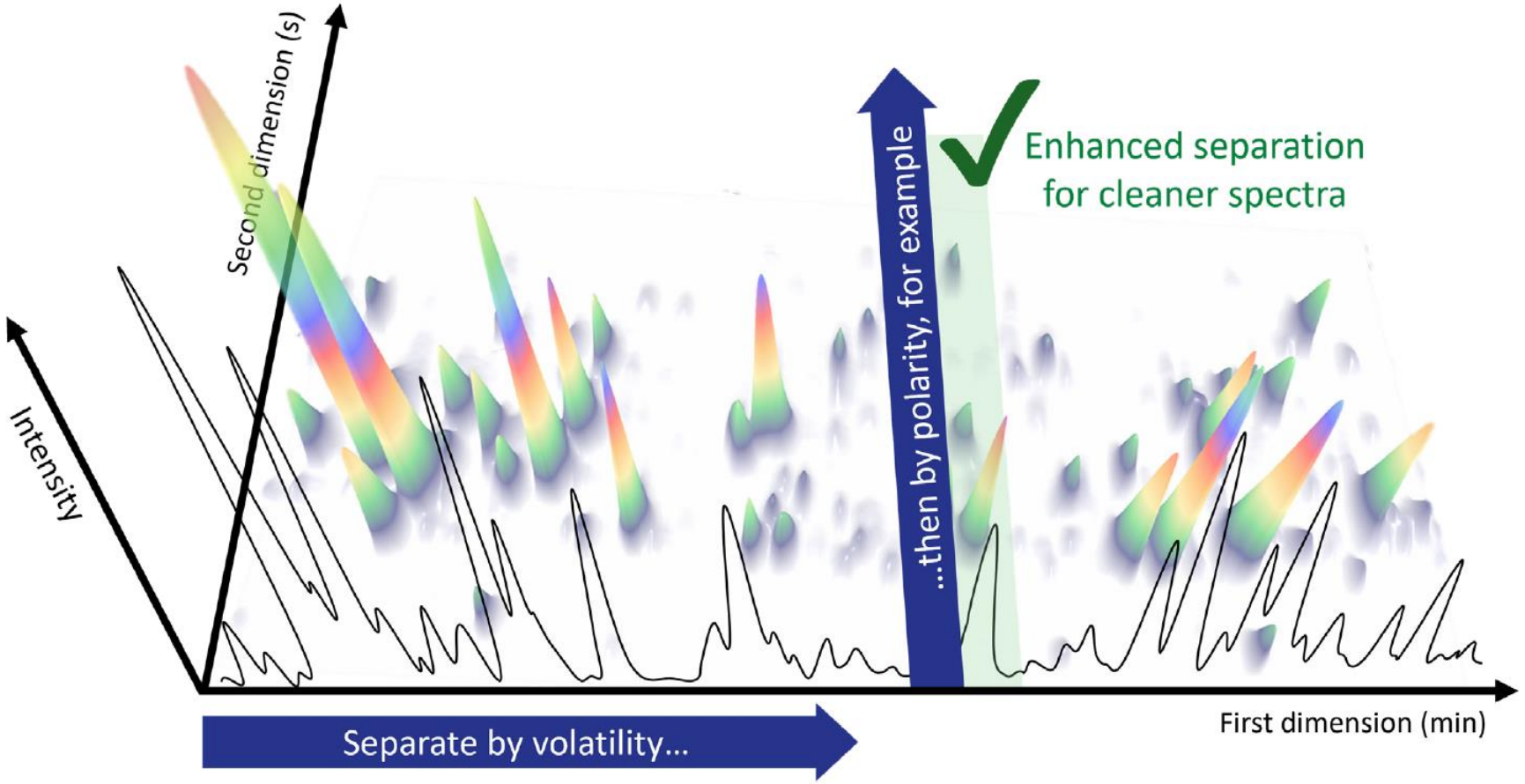


Benefit from the excellent spectral quality of BenchTOF2 at 70 eV while also acquiring complementary soft EI data

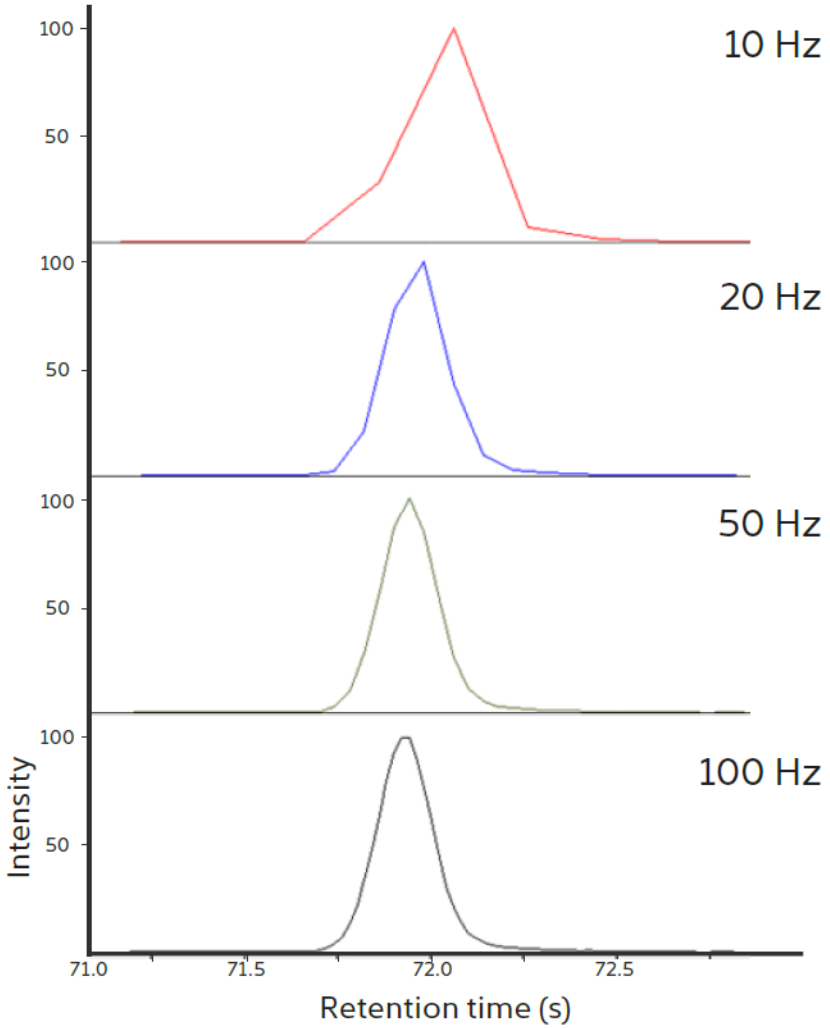
Reduced fragmentation and enhanced structurally-significant ions for confirmation of compound identity

Gaining greater insight into sample composition

BenchTOF2 is the ideal partner to GC×GC separations

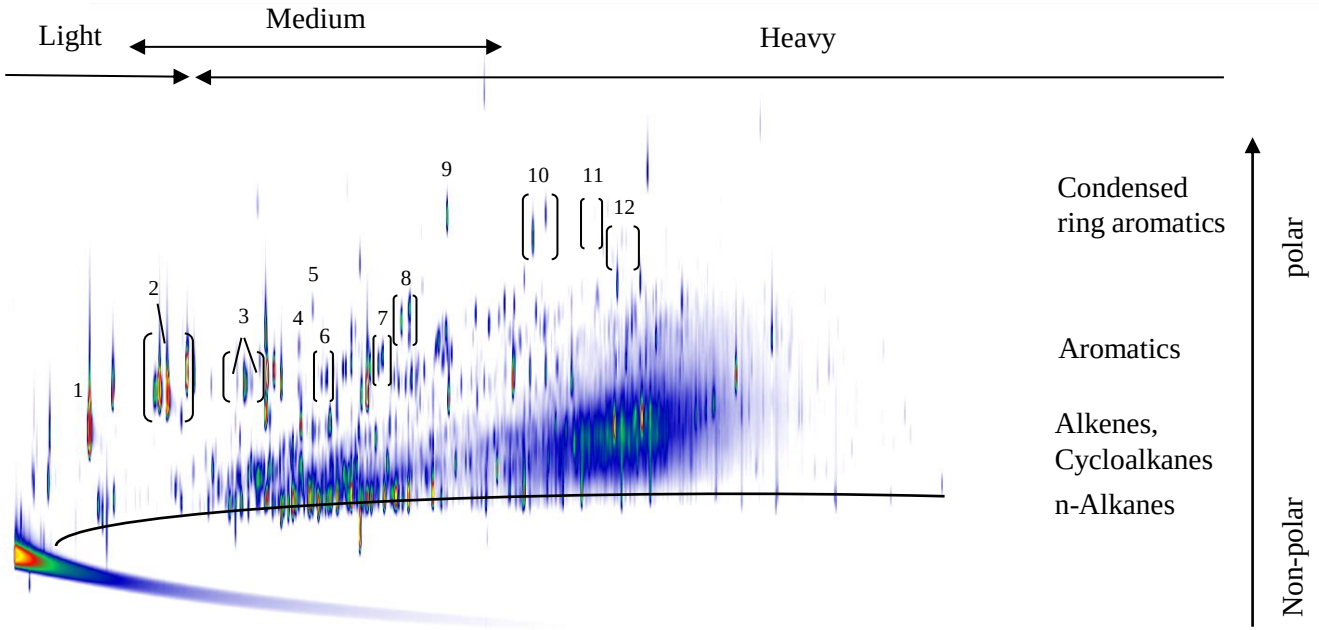


Why are fast acquisition speeds important?

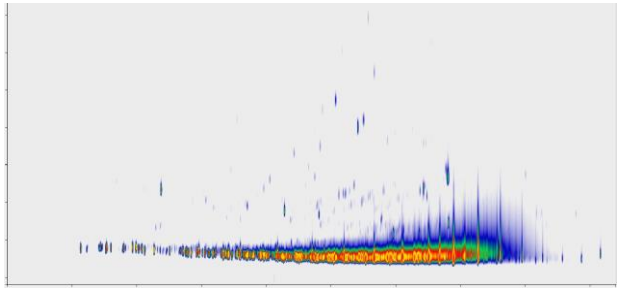


- 10-20 data points are needed to accurately define a chromatographic peak
- Fast acquisitions speeds are needed to tackle the narrow peak widths in GC×GC and hyper-fast GC

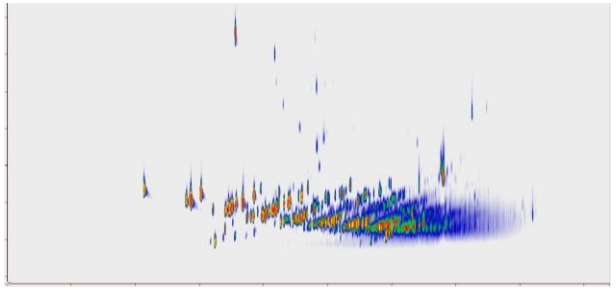
Enhanced separation by GC×GC–TOF MS



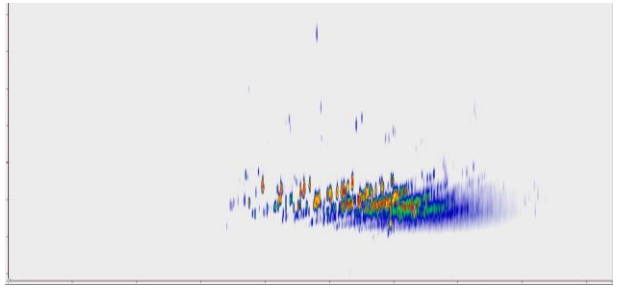
EIC alkanes



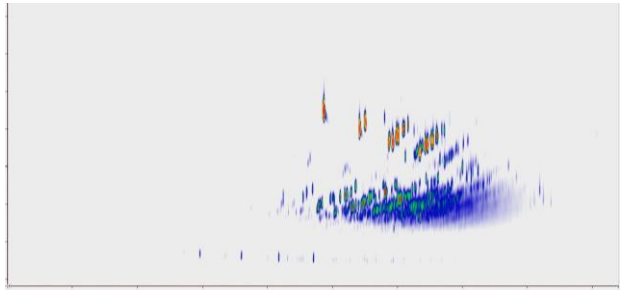
EIC aromatic alkylbenzenes



EIC indanes



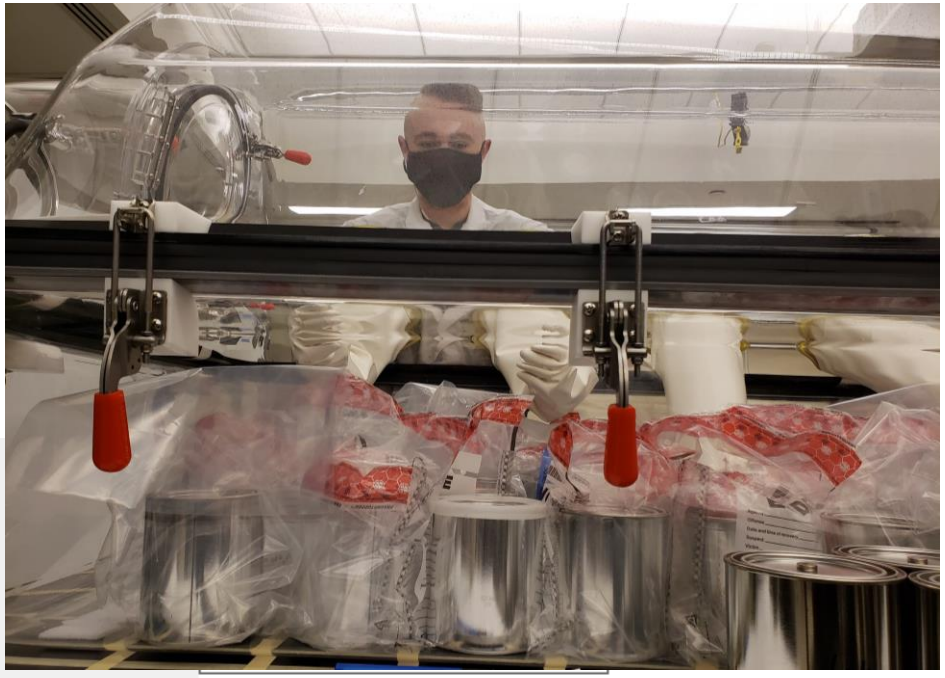
EIC naphthalenes (condensed ring aromatics)

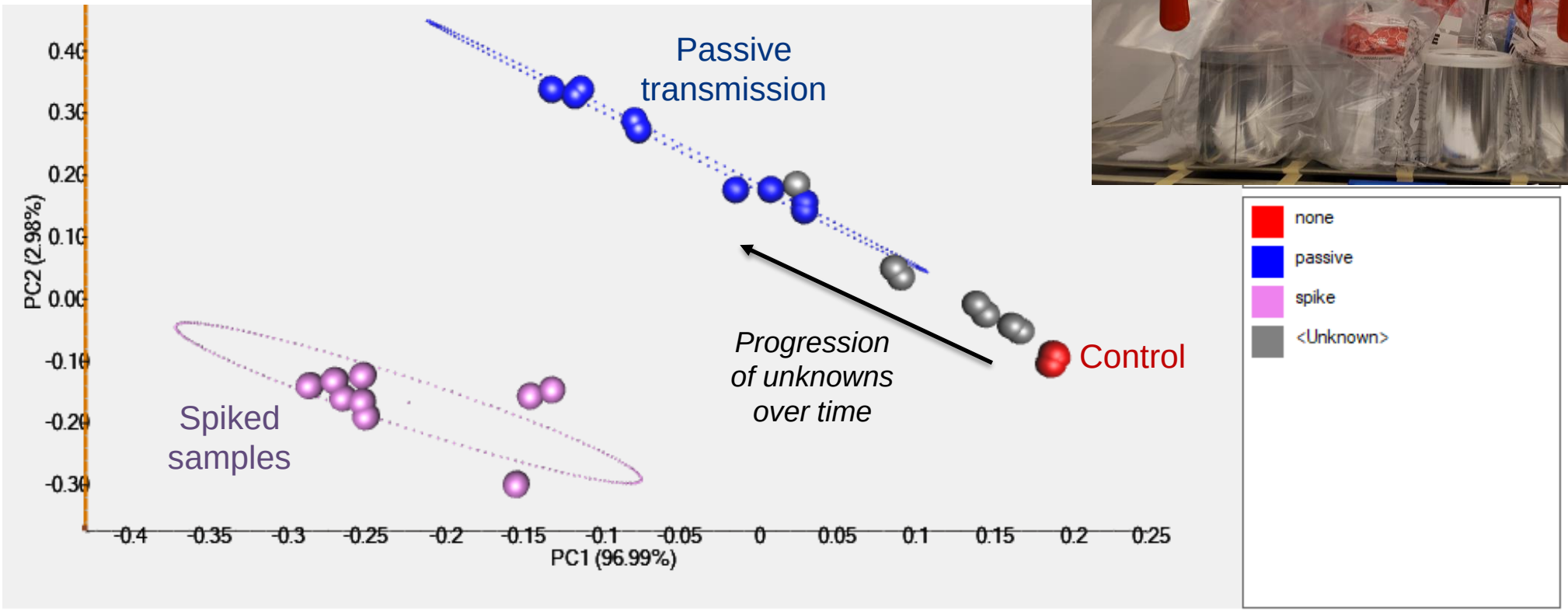


Data courtesy of Nadin Boegelsack, Mount Royal University – see webinar "Food, fire and fuel: Recent advances in the application of gas chromatography" for full details

Evaluating cross-contamination

- Glove box study can evaluate cross-contamination by passive transmission (e.g. a leaking or incorrectly sealed container)





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Summary

The BenchTOF2 provides:

- **Excellent spectral quality and improved mass accuracy (<50 ppm)** to eliminate guesswork in identifications.
- **Trace-level sensitivity for targets and unknowns**, revealing previously undetected components.
- **Tandem Ionisation** to enhance confidence in identifying challenging compounds, such as isomers.
- **Fast acquisition speeds**, making it an ideal detector for GC×GC and hyper-fast GC.
- **Futureproof technology** certified for use with hydrogen carrier gas.
- **Simplified workflows** and meaningful results through easy-to-use acquisition and processing software

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